s/051/61/011/006/004/012 E032/E114

Tatevskiy, M., Koptev, G.S., and Malitsev, A.A.

Vibrational spectra of the B_2O_3 and B_2S_3 molecules AUTHORS:

PERIODICAL: Optika i spektroskopiya, v.11, no.6, 1961, 724-729 TITLE:

In a previous paper (A.A. Malitsey, V.N. Marveyer. V.M. Tatevskiy, DAN SSSR, v.137, 123, 1961) it was shown that the frequency of the antisymmetric BO vibration is about 900 cm while D. White, D.E. Mann, P.N. Walsh and A. Sommer (Ref. 3. J. Chem Phys., v.32, 481, 1960) reported the figure of 1302 cm-1. rnys., v.)2, to1, 1900, reported the lighte of 1902 cm $^{\circ}$. The aim of the present work was to explore the possible reasons for this discrepancy. The authors describe a calculation of the vibrational spectra of the B_{2}^{100} and B_{2}^{110} molecules, and have

recalculated the spectra of $_{\rm B}^{10}{_{\rm B}^{11}}{_{\rm 03}}, \ _{\rm B_2^{2}}^{10}{_{\rm 3}}$ and $_{\rm B_2^{22}}^{12}{_{\rm 3}}$. The calculated frequencies of bands in the vibrational spectra of B_2^{10} O_3 : O_3 : B2S3 are shown in the following table:

Card 1/ 3

CIA-RDP86-00513R001755110017-3" APPROVED FOR RELEASE: 07/16/2001

Vibration	Symmetry	B100	B10B1103	B ¹¹ 0 ₃	B ¹⁰ 5	$\frac{B_2^{11}s}{2}_3$
77234 7774 7777 7778	A ₁ {	2084 844 755 161 2097 938 682 778 700	2022 829 754 161 2091 936 668 768	2015 815 749 160 2029 933 658 753	1359 425 1966 1364 465 347 351	1306 409 396 64 1317 463 350 356

The calculations show that the bands 1302 and 742 cmm2 which are observed in the infrared emission spectrum of vapours over boric anhydride are due to the liquid phase and not the pages Card 2/ 3

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

Vibrational spectra of the B_2O_3 and ... S/051/61/011/006/004/012 E032/E114 molecule. The 993 $\,\mathrm{cm^{-1}}$ band in the spectrum of boron sulphide is due to the spectrum of liquid B_2S_3 . It is suggested that in order to obtain more accurate values for the force constant and in order to increase the accuracy of the vibrational frequencies, more accurate spectroscopic studies are necessary in the region of 900 cm-1 where it is expected that there are bands due to antisymmetric BO vibrations, There are 1 table and 17 references: 5 Soviet-bloc and 12 non-Soviet-bloc. The four most recent English language references read as follows: Ref. 3: D. White, D.E. Mann, P.N. Walsh, A. Sommer, J.Chem. Phys., v.32, 481, 1960. Ref. 11: A. Sommer, P.N. Walsh, D. White, J. Chem. Phys., v. 33, 296, 1960. Ref. 12: C.W.F.T. Pistorius, J.Chem. Phys., v.31, 1454, 1959. Ref. 16: J.L. Parsons, M.E. Milberg, J. Amer. Ceram. Soc., v. 43, 326. SUBMITTED: January 2, 1961 Card 3/3

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

VYGODSKAYA, Ye.M.; TATEVSKIY, V.M.

Method of estimating the physicochemical properties of boron alkyls. Vest. Mosk. un. Ser. 2: Khim. 19 no.6:8-10 N-D '64. (MIRA 18:3)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

KOPTEV, G.S.; PANCHENKO, Yu.N.; TYULIN, V.I.; TATEVSKIY, V.M.

Calculating the frequency and vibration pattern of two isotopic forms of the molecules of 1.3-butadiene C4H6 and C4D6. Opt.

1 spektr. 19 no.2:194-197 Ag '65.

(MIRA 18:8)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

	SEY, F.; Y. SOURT, C. D.; CATAVEATY, V. N.	
	Dispose monor to it is appeared of the general Vest. Misk. we. S. r. 22 Misc. 20 no. 3.15 09	Mr-5: *65.
	L. Moskovokly universitet, kafedra fizi.	(MIRA 18:2) cheskoy khimii.
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TATEVSKIY, V.M.; SPIRIDONOV, V.P.

Remarks on G.V. Bykov's article "The terms electronegativity and electrophilic characteristic of atoms in molecules" and on "Electronegativity of atoms (atomic cores) in molecules." Part 1. Zhur. fiz. khim. 39 no.5:1284-1289 My '65.

Remarks on G.V. Bykov's articles "Term of electronegativity and electrophilic characteristic of atoms in molecules" and "Electronegativity of atoms (atomic cores) in molecules. Part 2. Ibid.:1291-1295 (MIRA 18:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

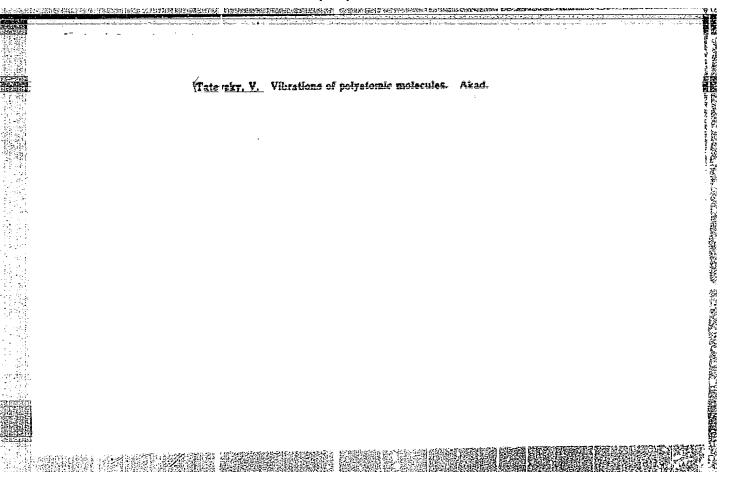
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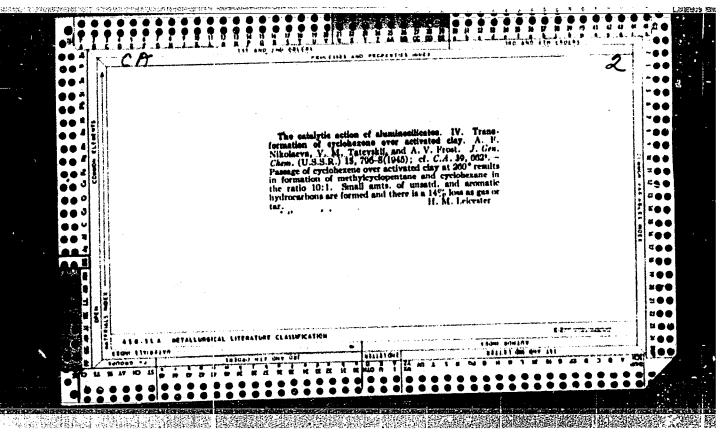
GEY, E.; YAROVOY, S.S.; TATEVSKIY, W.M.

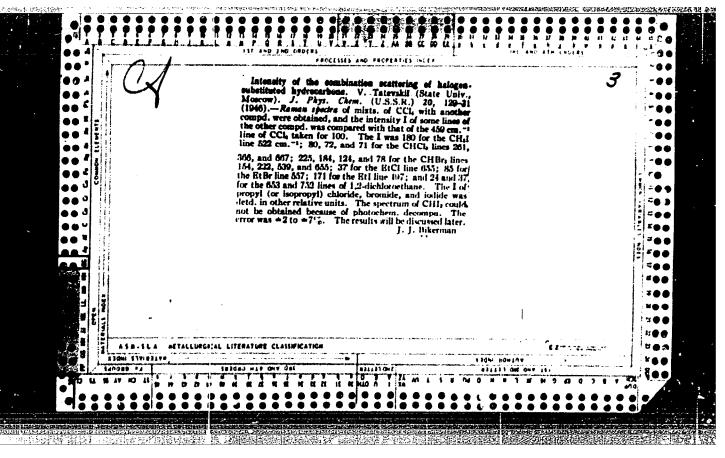
Dipole mements of compounds of the general formula A_nB_{2n+2} . West. Mosk. un. Ser. 2:Khim. 20 no.4:3-6 J1-Ag '65.

(MIRA 18:10)

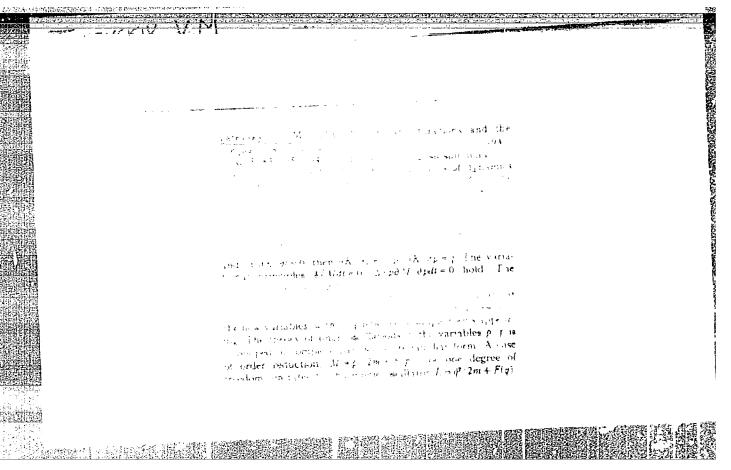
1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta.

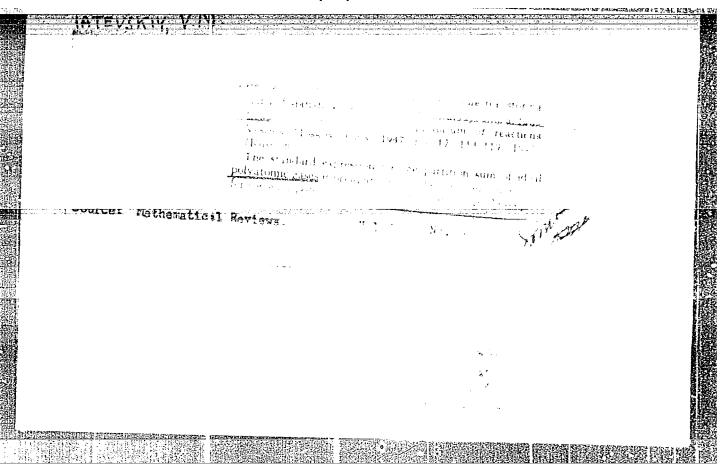


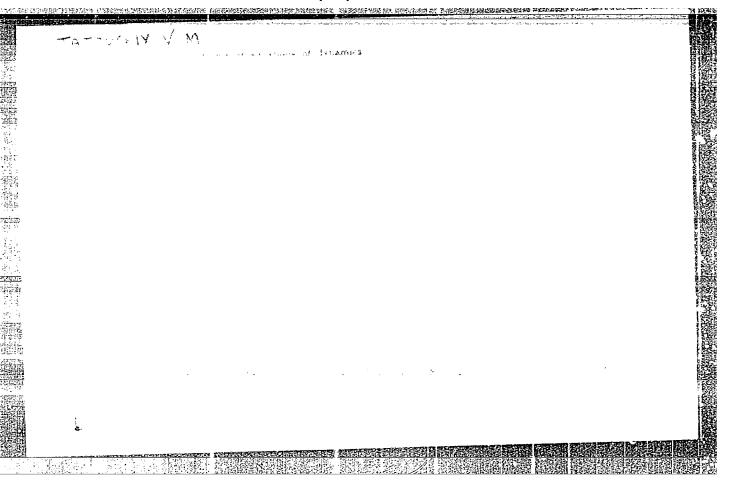


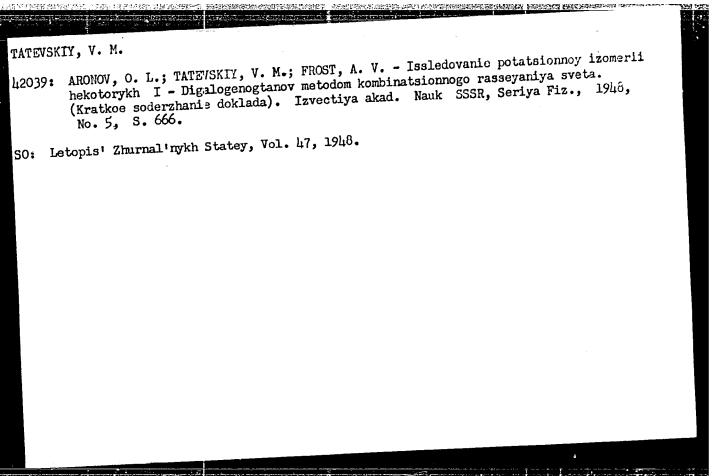


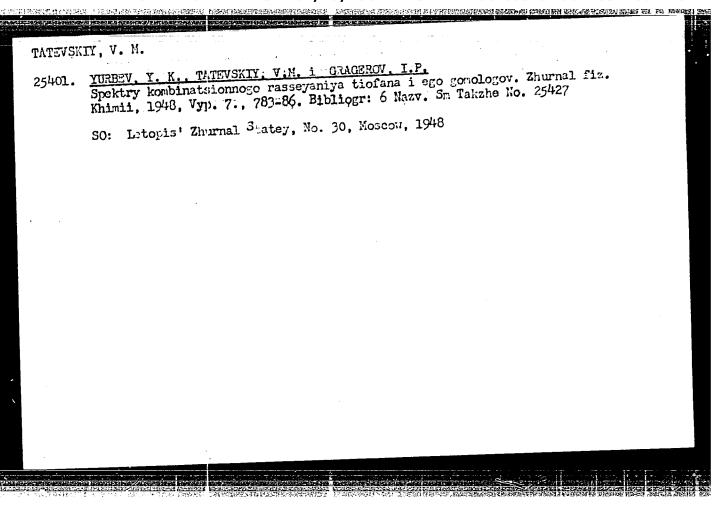
	FR 2417
THERRY Chemistry - Ethylene Chemistry - Ethane Chemistry - Ethane "Calculation of the Reaction Equilibrium of Chloring siny, isoture." Prof. A. V. Frost, 19 pp siny, isoture. "Yesthik Woskovskogo Universiteta." No 3 "Yesthik Woskovskogo Universiteta." No 3 "Yesthik Woskovskogo Universiteta." No 3 "Yesthical and spectroscopic date, calculational thermochemical and spectroscopic date, calculational mare been made of the equilibrium constant and molar have been made of the equilibrium constant and molar there been made of the equilibrium constant and others in the chlorine substitution in chylene and others her between tremps and laevo-forms of dichlorocthane has been tremps and laevo-forms of dichlorocthane has been tremps. At thylene (Conta) WOO cal/mol having been obtained, which agrees the computation, with the results obtained by other wathods.	

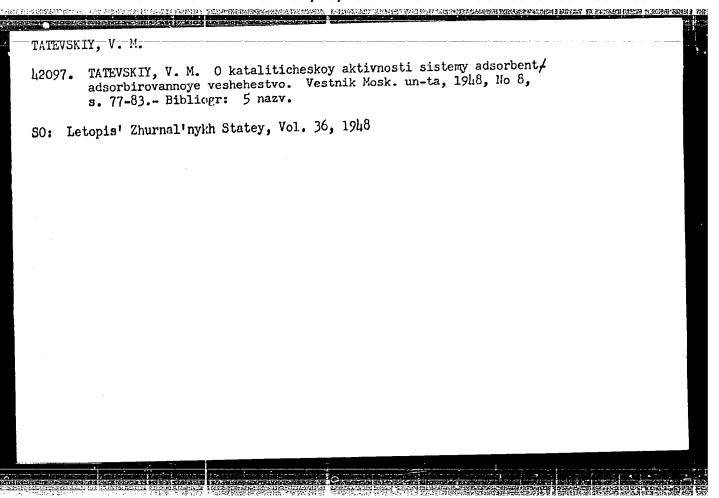












TATETOKIY, V. E.

Tatevskiy, V. F. and Finkel'shteyn, A. I. "An approximate method of calculating determinants of a spe ial type", Ventrik Yosk. un-ta, 1943, No. 10, p. 63-74.

SO: U-3042, 11 March 53, (letopis 'nyth Statey, No. 10, 1949).

"Study of Rotational Isomerism by the Combination Light Dispersion Method. IV. Spectra of Combination Dispersion of 1, 1., 2, 2-tetrachloroethane at Various Temperatures."

Vestnik Moskovskogo Universiteta, no. 11, 1948

TATEVSKIY, V. M. - "Combination scattering spectra of aromatic Cg hydrocarbons," Vestnik Mosk. um-ta, 1948, No. 11, p. 149-53

So: U- 3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)

TATEVSKIY, V. M.

USSR/Chemistry - Isomerism Chemistry - Spectra Sep/Oct 48

"Studies of the Rotational Isomerism of Some 1,2-Dihalogen-ethanes by the Method of Combined Dispersion of Light," D. L. Aronov, V.M. Tatevskiy, A. V. Frost, ½ p

"Iz Ak Nauk SSSR, Ser Fiz" Vol XII, No 5

Studies combination dispersion spectra of 1,2-dichloroethane, 1-chloro, 2-bromoethane, 1,2-dibromoethane and 1,1,2,2-tetrachloroethane in the liquid phase over a wide range of temperatures. (Synopsis. For detailed description, see "Vest Moskov U" 1, 125, 1943.)

PA 19/49T4

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TATEVSKIY, V. M.

iSR/Chemistry - Organic Compounds Determination of Aromatic in Gasoline

Sep 48

Ct mistry - Analysis, Spectrochemical

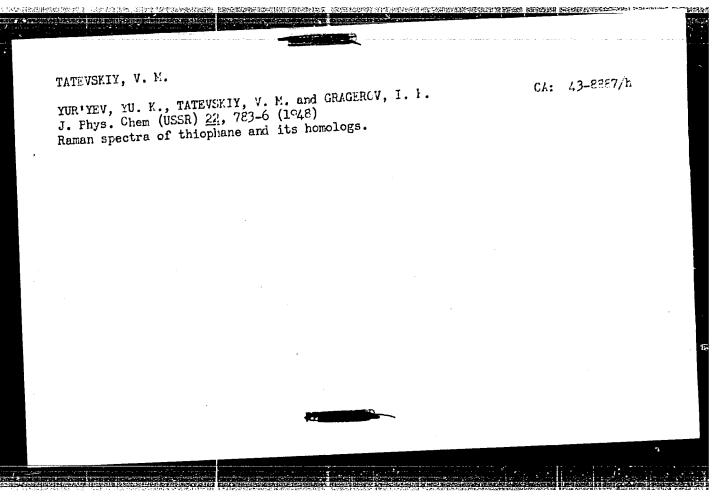
Quantitative Determination of Arcmatic Hydrocarbons C6—Cg in Cracking Gasoline by the Method Combined Dispersion of Light, M. D. Tilicheyev, P. A. Akirhin, Te. G. Treshchova, V. M. Revskiy, Cen Inst of Aviation Fuels and Lubricants and Hoscov State U, 82 pp

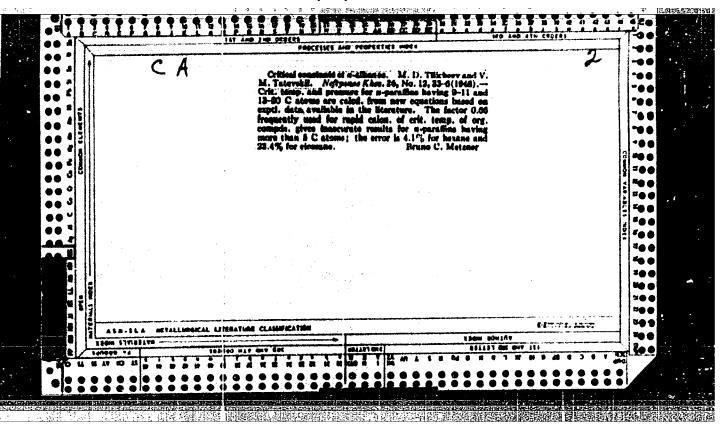
laved Lab" Vol XIV, No 9

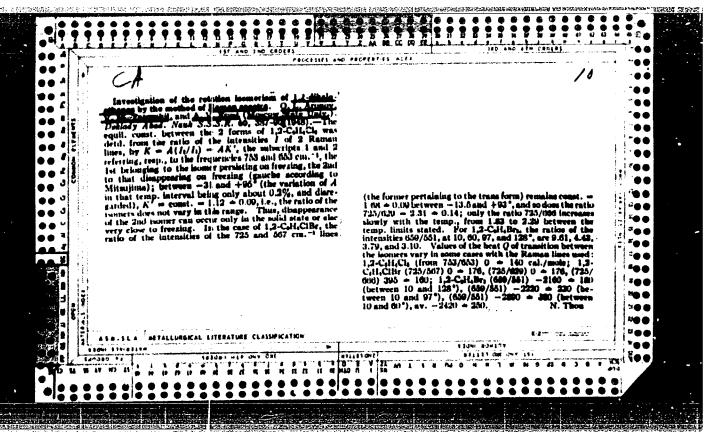
hasures frequency and intensities of lines in combination dispersion spectra of arcmatics—thylbenzene, o-, m-, and p-xylenes. Demonstrates possibility of determing these arcmatics in racking gasolines in the presence of alkanes by this method for 60 artifical mextures. Consutration of individual compounds varied 2 -40%.

1 16/49T26

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"







TATEVSKIZ, V.M.

Hindered fotation in the 1.2 dihalorthane series. O. L. Aronov, V. M. Tatevskif, and A. Frost (Moscow State Univ): Doklady Akad. Nauk S.S. S.R. 60, 1177-80 (1948); cf. preceding abstr.—The ratio of the intensities I of the Raman lines 753/653 cm.—1 of 1.2-C₁H₁Cl₁ was deid. in various solvents: pure liquid 1.12; in CCl₁ (75.2, 50.3, 24.6 mole % of 1.2-C₁H₂Cl₁l₁l₂l₃) 1.37, 1.68, 3.17; in C₄H₁₁ (78.7, 61.4, 23.9) 1.27, 1.23, 2.03; in cyclohexane (75.2, 50.2, 25.4) 1.21, 1.93, 2.70; in C₁H₁₁ (78.7, 61.4, 23.0) 1.21, 1.47, 2.10; in C₁H₁ (88.7, 63.4, 25.4) 1.41, 1.13, 1.25; in EtOH (88.0, 54.6) 1.04, 1.20; in PhNO₂ (43.5, 23.1) 0.93, 0.81. For 1.2-C₁H₂Br₂, lines 659/551 (the variations at 100 mole % are due to insufficient constancy of the temp.): in CCl₂ (100, 81.0, 43.3, 19.2) 7.0, 7.2, 6.0, 6.2; in C₁H₁₁ (100, 60.4, 22.6) 7.0, 4.5, 3.7; in cyclohexane (100, 82.5, 54.1, 24.8) 9.1, 8.9, 6.3, 5.3; in C₁H₁₁ (190, 42.4, 21.4) 7.0, 7.2, 7.3; in C₂H₂ (100, 46.7, 15.2) 7.0, 5.7, 2.9; n EtOH (100, 60.1, 12.7) 9.1, 8.9, 4.6; in PhNO₂ (100, 41.7, 15.1) 9.1, 4.1, 2.1. For 1.2-C₂H₃Cl₃, the dependence of the equil. const. of the 2 rotation isomers $(K = A I_1/I_1)$ on the solvent is great-

est in the case of nonpolar solvents. Almost no change is found in solvents with a dipole moment close to that of C₁H₄Cl₁ itself, e.g. EtOH. Some lowering of K, as compared with the pure liquid, is found in solvents with a dipole moment higher than that of C₂H₄Cl₁. The effect of a nonpolar solvent licing primarily one of diln., it follows that the 1st form is little polar or nonpolar, while the 2nd form has a higher dipole moment. A solvent with a high dipole moment shifts the equil. In favor of the 2nd form. Strikingly, C₄H₄ behaves more like a solvent of medium polarity, rather than as a nonpolar liquid; this may be

due to its polarizability, giving rise to induced dipole moments. The foregoing considerations are not applicable to 1,2-C₁H₁Hr₁.

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APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

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TATEVSKIY, V. V.

Jun 1948 USSR/Chemistry - Ethane, 1,2-Dichloro

Chemistry - Ethane, 1,2-Dibromo

"Rotational Isomers of 1,2-Dichloroethane and 1,2-Dibromoethane in Solution at Different Temperatures, O. L. Aronov, V. M. Tatevskiy, A. V. Frost, Moscow State U imeni M. V. Lomonosov, 3 pp

"Dok Ak Nauk SSSR" Vol LX, No 8

Study the spectra of subject substances to explain the effect of various factors on the equilibrium of rotational isomers in these compounds. Submitted by Acad A. A. Balandin 13 Apr 1948.

70T14

"这些可以的是我们都是我的特别,他们可以是我们的自己的说法,是是我们的意思,我们我们的对象,我们也可以的一个一个一个一个一个一个一个一个一个一个一个一个一个一个

USER/Chemistry - Hydrocarbons, Aromatic Aug 48 Chemistry - Hydrocarbons, Raman Spectra

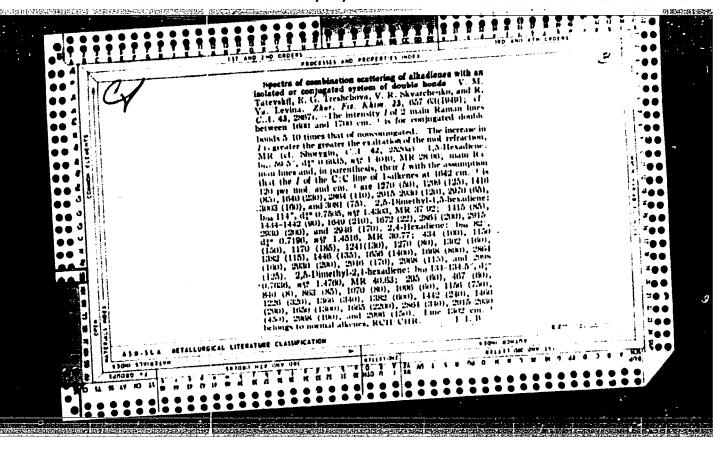
"Spectra of the Combined Dispersion of Aromatic C8
Hydrocarbons," Ye. G. Treshchova, V. M. Tatevskiy,
Moscow State U imeni M. V. Lomonosov, 4 pp

"Dok Ak Mauk SSSR" Vol LXI, No 5

Raman spectra of following hydrocarbons with the purity indicated are reported: ethylbenzene 99.4%, o-xylene 98.4%, m-xylene (purity undetermined) and p-xylene 97.2%.

24/49T17

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"



AKISHIN, P. A., KELIE, V. I., TATEVSKIY, V. M. SILAYEV, A. V.

Biophysics.

One mistaken theory of Professor Kobozev. Vest. Mosk. un. 5 no. 8, 1950.

9. Monthly List of Russian Accessions, Library of Congress, November 1953, Uncl.

CA

Problems of the chemical structure of hydrocarbons. I. Laws of geometrical configuration of hydrocarbon molecules. V. M. Talevskii. (Aloneow Blate Univ.). Verimit Mesher. Univ. 5, No 10, Nev. Fis.-15at. i Estesiva. Nauk No. 7, Sci.-78(1950); cf. C.A. 45, 1783d.—The current-resonance theory, represented by Pauling, which attributes the deviations in C.—C distances from the standard values for the single, double, and triple bond, to intermediate bond multiplicities (e.g. percent of double-bond character) is assailed. It is contested that any problems posed by the confugated double or the aromatic bend are irreconcilable with the original structure theory of A. M. Butlerov. Hond distances are not immutable, and are not solely a function of the multiplicity of the bond, but are primarily detd. by the geometric configuration of the atoms involved, whether tetrahedral, plane, or linear. The facit assumption that in a single bond the C.—C distance must be invariably 1.34 A. irrespective of the geometry is unfounded. A classification of C.—C bonds is proposed which is based on the configurations of the valences around each, i.e. on their "coordination nos." The system is admittedly phenomenological, insofar as it does not concern itself with the problem of the phys. meaning of the differences of the valence configurations. In the Pauling curve of interat. C.—C distance as a function of the percentage of double-bond character the points for C.H., Calla, and graphite are correct, but the point for C.H., calla, and graphite are correct, lest the point for C.H., calla, and graphite are correct, and the points for C.H., calla, and graphite are correct, and the points for C.H., calla, and graphite are correct, and the points for C.H., calla, and graphite are correct, and the points for C.H., calla, and graphite are correct, and the points for C.H., calla, and graphite are correct, and the points for C.H., calla, and graphite are correct.

graphite, and butadiene (a = 0)(1) lie on a straight line. The justification for taking lustadiene instead of ethane is that butadiene has a a hund between C atoms in the same valence state as in Cills. Calls, and graphite, whereas it is not legitimate to identify the a bond in Cills with that same plot would permit calen, of the C distance in butadiene plot would permit calen, of the C C distance in butadiene into the viewpoint which sees the partial double-bond rition to the viewpoint which sees the partial double-bond intermediate land multiplicity is interpreted as the result of termediate land multiplicity is interpreted as the result of termediate land multiplicity is interpreted as the result of termediate land multiplicity is interpreted as the result of another takes part also in other bonds; consequently, that involved takes part also in other bonds; consequently, that involved takes part also in other bonds; consequently, that aromatic rings should, with increasing no. of such rings, aromatic rings should, with increasing no. of such rings, aromatic rings should be some difference in the interact distributes. The bond in naphthalese and the 14—10 bond in anthracene; however, no data are available at this time in anthracene; however, no data are available at this time in anthracene; however, no data are available at this time of the particle with each bond represented by a buil and are written with each bond represented by a luil and are written with each bond represented by a luil and are written with each bond represented by a full and a condition; particle of the bond in an area of the condition; particle of the bond in the tetrahedral configuration to a C atom with valences in the tetrahedral configuration (type = C, or the benzen type). In condensed aromatic lines, bonds of a type intermediate between those in house in

TATEVSKII, V. M.

Levina. R. Ya. Skvarchenko, V. R., Treshchova, E. G., and <u>Tatevskii. V. M.</u> - "Synthesis of hydrocarbons. IX. Diene hydrocarbons in the synthesis of olefinic hydrocarbons with a central double bond." (p. 419)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1950, Vol. 20, No. 3.

TATEVSKY, V.M.

Synthesis of hydrocarbons. X. Partial reduction of conjugated-diene hydrocarbons by sodium in liquid ammonia. R. Ya. Levina. Y. R. Skvarchenko, V. M. Tatevsky, and E. G. Treshchova (J. gen. Chem. USSR, 1950, 20, 684-690 [U.S. transl., 721-726]; cf. A., 1950, II, 175).-Partial reduction of (CHMe:CH)₂ by Na in liquid NH3 affords a mixture of the 1: 2- and 1: 4-dihydro-compounds, CHMe:CHPrⁿ (60-65%) and (:CHEt)₂ (35-40%), and is thus unsuitable for the prep. of the latter; Raman-spectral analysis (details given and discussed) proves the presence of both cis- (30%) and trans-forms (70%). CHMe:CHPrⁿ is synthesised, for comparison purposes, from CHMe:CH·CH2Cl and EtMgBr, a mixture of cis- (20%) and trans-forms (80%) being obtained.

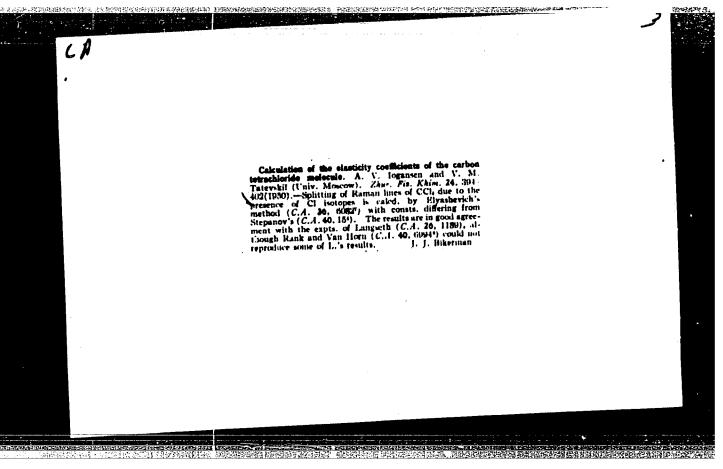
Slow addition of (CHMe:CH)₂ (16g.) in Et₂O to Na (36 g.) in liquid NH₃ at -50° to -60°, stirring for 5-6 hr., and keeping overnight afford a product. CH₁₂ (75%), b.p. 67.5°/761 mm., di 0-6802, nf 1.3962 [freed from starting materials by (:CH·CO)₂O] which is analysed spectrographically (Raman-spectral lines tabulated). Reaction of aq. HCl with (CH₂:CH)₂ affords l-chlorobut-2-ene, b.p. 84°/748 mm., di 0.9282, nf 1.4350, and 3-chlorobut-1-ene, b.p. 64°/748 mm., di 0.8990, nf 1.4150; both isomers react with EtMgBr in Et₂O in the usual manner and give identical products viz., mixed cis- and trans-hex-2-ene. b.p. 67.5 - 67.7°/748.5 mm., d 0.6805, nf 1.3940.

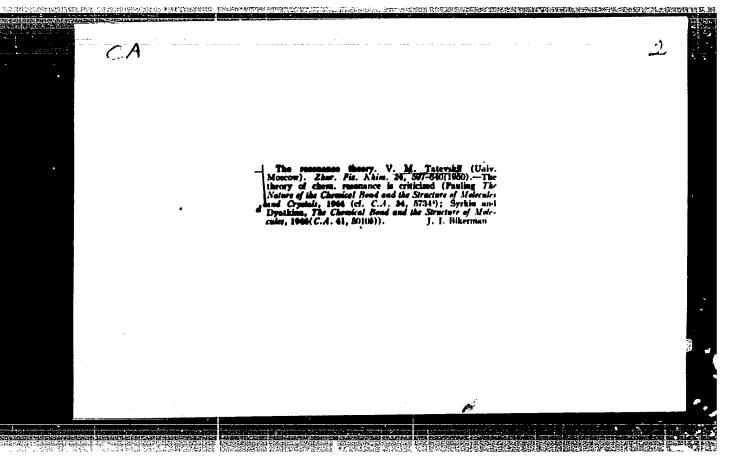
TATEVSKII, V. M.

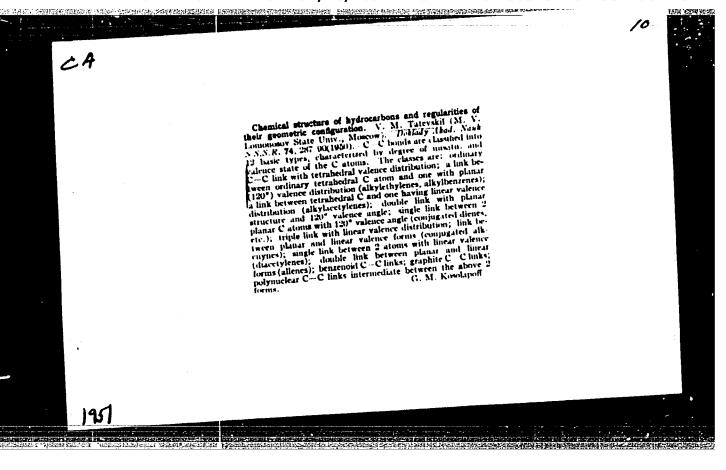
R. Ya. Levina, V. R. Skvarchenko, E. A. Viktorova, <u>V. M. Tatevskii</u>, and E. G. Treshchova, "Synthesis of hydrocarbons. XI. Partial reduction of diene hydrocarbons with a conjugated system of double bonds by sodium in liquid ammonia." (p. 690)

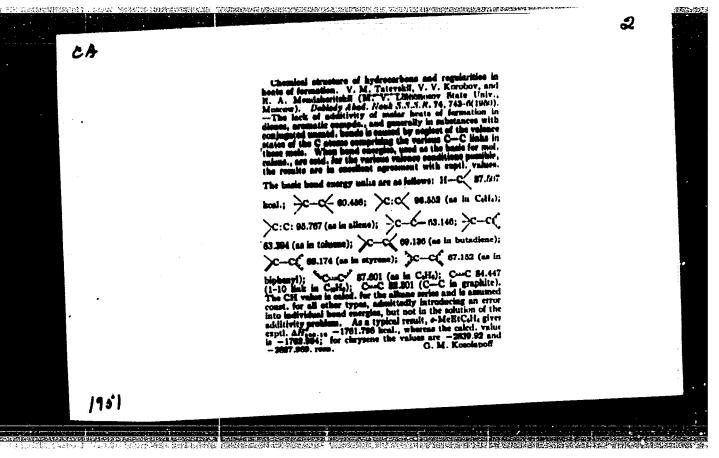
SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii) 1950, Vol 20, No. 4.

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USSR/Chemistry - Thermodynamics 21 Dec 50

"Chemical Constitution of Hydrocarbons and Regularities in the Heats of Formation," V. M. Tataevskiy, Hoscow State U imeni M. V. Lomonosov

"Dok Ak Nauk SSSR" Vol LXXV, No 6, pp 819-822

Postulates 10 subtypes of bond CC in alkanes and 3 subtypes (primary, secondary, tertiary) of bond CH having different heat contents. Calcn of heats of formation on basis of principle of additivity then leads to satisfactory results. Same principle of additivity also ought to apply to other values like mol vol and mol refraction, but this must be checked.

172711

LEVINA, R. YA., FAYNZIL'SERG, A. A., TATEVSKY, V. M., TRESHCHOVA, YE. G.

Carbinols

"Contact dehydration of dimathylallyl carbinol." Uch. zap. Mosk. un. No. 132, 1950.

Monthly List of Russain Accessions, Library of Congress, October 1952. UNCLASSIFIED.

TATEVSKIY, V. M.

"Some Questions of the Theory of Molecular Systems." Sub 28 Dec 51, Moscow Order of Lenin State U imeni M. V. Lomonosov.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

TATEVSKIZ, V.M.

Author: Tatovskiin V.M.

Title: Speciroscopy, Ed. by A.V. Frost

189 pp., illus.

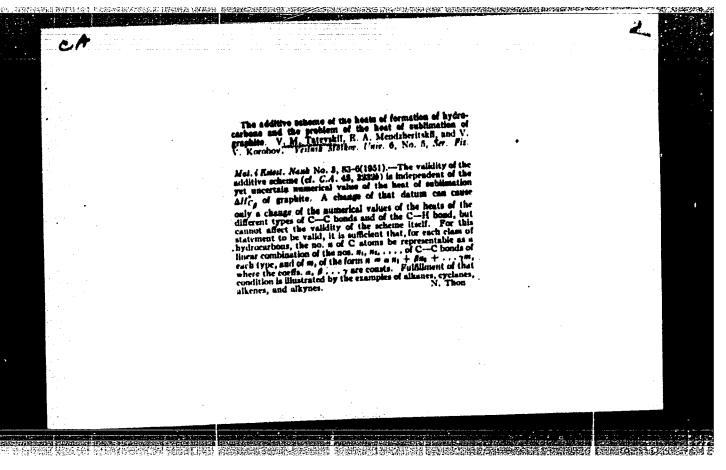
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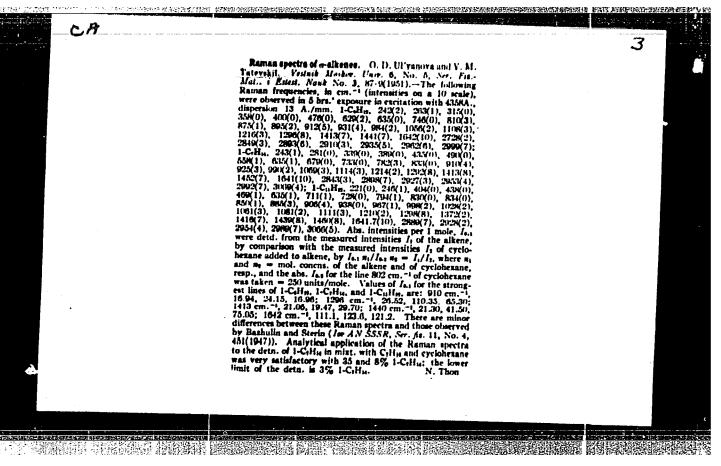
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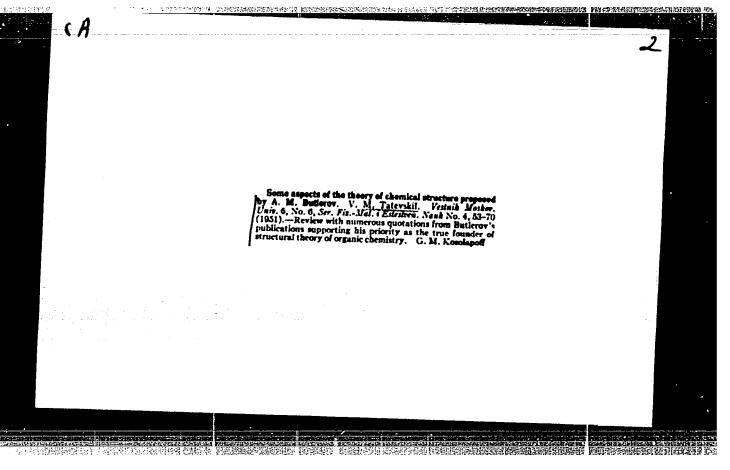
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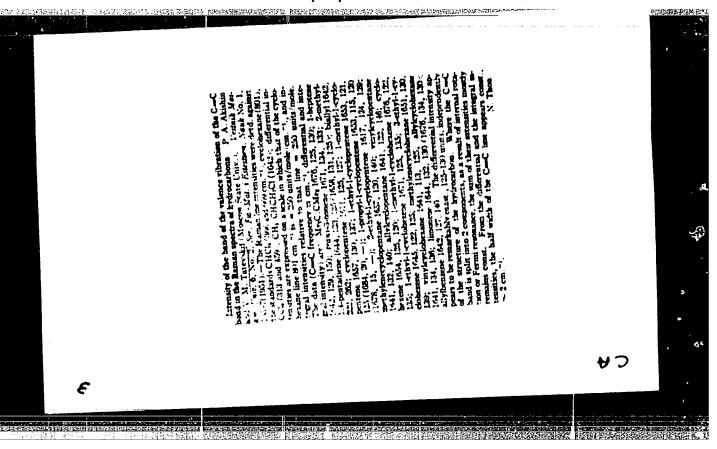
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"Isomerisation of unsaturated hydrocarbons over metallic exides. KII. Proparation of methyl pentadienes by dehydration of directlyl allyl carbinal over chrotum exide-on-alumina," by R. Ya. Levina, A. A. Fainzillberg, Y. M. Taterskii, E. G. Beredina. (p.233)

S0: Journal of General Chemistry (Zhumal Obshchei Khimii) 1951, Volume 21, No. 2

TATEVSKIY, V.	N.	The state of the s	A PER	A STANCE STANCE		TO THE SECURITY OF THE SECURIT		.84 T36
				of mesomerism; (5) nonacceptance of Cheorbital theory.	USSR/Chemistry - Resonance Theory (Contd)	Criticizes V. M. Tatevskiy for (1) usurpation of Chelintsev's priority in criticism of theory of resonance, giving Chelintsev no credit; (2) incomplete criticism of theory based on quantum mech aspects only; (3) acceptance of postulates of dislocation and diffusion of electrons, which in effect retained resonance theory; (4) acceptance 184736	Article 'On the Theory of Resonance,'" Chelintsev, Moscov "Zhur Fiz Khim" Vol XXV, No 2, pp 239,	USSR/Chemistry - Rescnance Theory
	184 T36			Chelintsev's	Feb 51	usurpation of of theory of of theory of idit; (2) in- on quantum of postulates ectrons, which r; (4) acceptanc	240	Feb 51

TATEVSKIY, V.			drocarbons by orbital method d. Quantum chem calons show additivity.	USSR/Chemistry - Resonance Theory (Contd)	Butlerov as e. Calls re hods for cal hods of addi	504 " " " " " " " " " " " " " " " " "	ems of A. M. Butlerov's Theory ture. II. Chemical Structure Regularity in Energies of For y, Moscow State U imeni V. M.	USSR/Chemistry - Resonance Theory
	184137	•	or practi-	Feb 51	toc rigid sonance cn of restivity formation 184T37		pory of Hy- ire of Hy- Formation, M. Lomono-	Feb 51

Mar 51	Dic Ex- Mol	m		185 <u>ru</u> Mar 51	collection isotopic of chief chief com form. substi-	185 <u>T</u> t
	"Calculation of the Equilibria of Isotopic change Reactions," V. M. Tatevskiy, Lab Mol Spectroscopy, Moscow State U imeni M. V.	"Zing Fiz Knim" Vol XXV, No 3, pp 261-273	uul consts (Kp) de- symmetry by propose ants of statistical e equils. Treated showed approx method temps using numbers			
	"Calculation of the Equilibria of I, change Reactions," V. M. Tatevskiy, Spectroscopy, Moscow State U imeni N Lomonosoy)	No 3, p	Obtained expression for equil consts (Fending only on numbers of symmetry by new theorem and 2 new variants of statimethod for calcn of isotope equils. Intemp dependence of Kp and showed approxfor its calcn for certain temps using n	Isotopes (Contd)		
Isotopes	e Equil V. M. ov State	1 XXV, 1	Obtained expression for equil pending only on numbers of synnew theorem and 2 new variants method for calcn of isotope eqtemp dependence of Kp and show for its calcn for certain temp	otopes	symmetry, geom forms of mols, fundamental frequencies for or of each type. Ratio of produents of inertia of isotopic may on and can be calcd from masustrated reactions include isoed forms of CClu, CHu, H20, H2	
	n of the tions," Y, Moscc	lim" Vo	d expression only on number and 2 refer of for calcu of sendence of calcu for calcu for calcu for c		', geom formital frequent type. Rainertia of can be can reactions of CClu, C	
USSR/Chemistry	"Calculation of the change Reactions, Spectroscopy, Wose Lononoscop	N ził.	Obtained express Pending only on new theorem and method for calcu temp dependence	USER/Chemistry	metry, dementation of its of its of the rated rated reforms of the restrict of	
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TATEVSKII, H. V.

135T5

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USSR/Chemistry - Isotopes

Mar 51

"Use of Lemmata of Similarity for the Calculation of the Vibration Spectrum of Isotopic Molecules," M. V. Tatevskiy, Lab Mol Spectroscopy, Moscow State U imeni M. V. Lomonosov

"Zhur Fiz Khim" Vol XXV, No 3, pp 274-282

Indicates method for use of lemmata of similarity for calcn of vibration frequencies of isotopic mols XY_n using exptl data for mols substituted with other isotopes. Examples include deuterium- and tritium-substituted H₂O, H₂S, H₂Se, NH₃, PH₃, AsH₃, CH₄, SiH₄, GeH₄, NH₄, and WO₄, IO₃, ReO₄, substituted with Ol7.

生,1971年中代,N74的原则的合作。但用于由于对于基本。企业是是国际,企业中的企业和国际的联系的**,但是国际的企业的企业的企业的企业,**企业中的企业。

TATEVELIY, Y. M.

USSR/Chemistry - Antiknock Fuels

Oct 51

"Spectra of Combination Scattering of Certain Co-Continuous With Tertiany Carbon Atoms," Ye. G. Treschova, V. M. Tatevskiy, T. I. Tentsyreva, A. A. Paynoil'berg, R. Ya, Levina, Moscow State U imeni M. V. Lomonosov.

"Zhur Fiz Khim" Vol XXV, No 10, pp 1239-1247.

Measurements of number and intensity of lines in spectra of combination scattering of 2, 4-dimethylhexane, heptane, octane, and nonene, 2, 4, 5-trimethylhexane, 2, 4, 6-trimethylheptane, and 2, 4, 7-trimethyloctane, in agreement with theoretical conclusions of B. I. Stepanov, showed that different types of branchings of alkane C skeleton are represented by ap characteristics of spectrum.

PA 194T18

TATAYEVSKIY, V. H. 178715 U58R/Chemistry - Hydrocarbons "Intensity of the Bandl of the C=C Valency Vibration in Combination Dispersion Spectra of Hydrocarbons," P. A. Akishin, V. M. Tatayevskiy, Moscow State U imeni M. V. Lomonosov "lok Ak Nauk SSSR" Vel LXXVI, No 4, pp 527-530 Lists frequencies in cm 1 produced by C=C bonds, differential intensities per mol in cm-1, and integral intensities per mol for 21 unsatd hydrocarbons of different constitution. General relationships established on basis of these data can be used in quant mol analysis and for detg structural elements (isolated C=C bonds). 178r15

TATEVSKIY, V.M.

USSI /Chemistry - Fuels

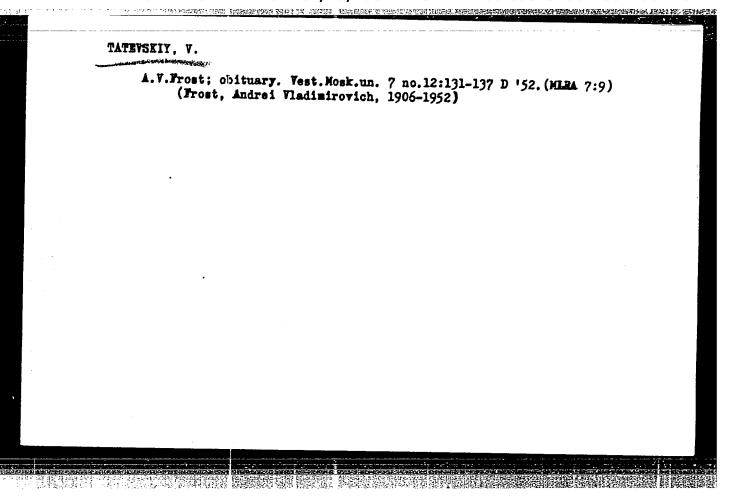
1' May 51

"Chemical Structure of Hydrocarbons and Regularities in the Heats of Formation," V. M. Tatevskiy, V. V. Korobov, E. A. Mendzheritskiy, Moscow State U imeni M. V. Lomonosov

"Dok Ak Nauk SSSR" Vol LXXVIII, No 1, pp 67-69

The authors studied the heats of formation of his straight and branched-chain hydrocarbons. They give a table depicting the increments in the heat of formation for the addn of single carbon atoms to the chain. Values for $\Delta \text{H}^0_{\text{CnH2n+2}}(\text{at})$ were calcd on an additive basis for the temps 0 and 298.16° K.

217<u>T3</u>



TATEVSKIY, V. M.

USSR/Chemistry-Hydrocaroons

Peb 52

"Synthesis of Hydrocarbons. XVII. Homomesitones in the Synthesis of Isoparaffinic Hydrocarbons," R. Ya. Levina, N. P. Shusherina, Ye. G. Treshchova, V. M. Tatevskiy, Lab of Org Chem imeni Acad N. D. Zelinskiy, Moscow State U

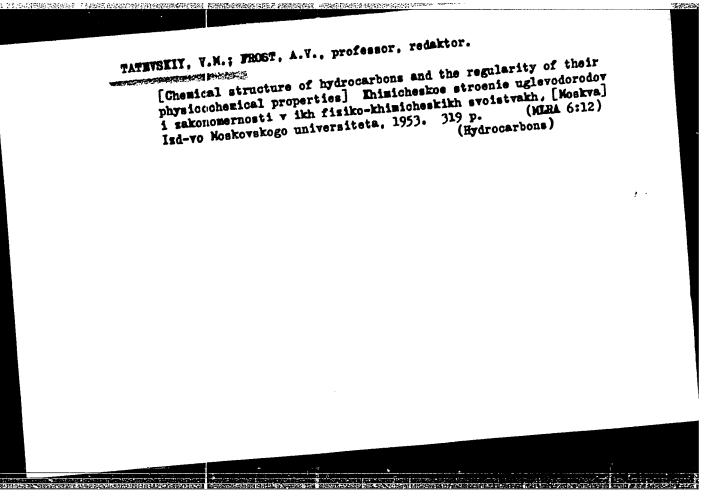
"Zhur Obshch Khim" Vol XXII, no 2 pp 199-208

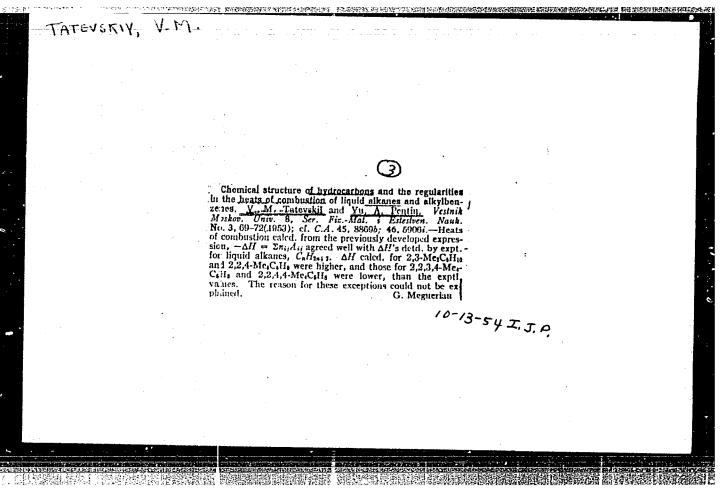
Developed method to synthesize difficulty obtainable isoparaffins 3, 5-dimethylheptane (I), 3-methyl-5-ethylheptane (II), 3-methyl-5-ethyloctane (III), 3-methyl-5-ethylnonane (IV), 2, 3, 4-trimethylhexane (V), 3, 4, 5-trimethylheptane (VI), none described in the literature. Synthesized I-IV by reaction of mixt of "homomesitones" 3-methylheptane-3-one-5 and 3-methylheptane-2-one-5 (products of condensation of methylethelketone with CaC) with org Mg compds, then dehydration of products (unsatd tert alcs) and catalytic hydrogenation of resulting diene hydrocarbons. V and VI were synthesized in same way with exception that "homomesitones" in this case were 3, 4-dimethylhexene-3-one 5 and 3, 4-dimethylhexene-2-one-5 (products of condensation of methylethylketone with HC1).

209114

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

USSR/Chēmistry - Hydrocarbons of Various Types: III. Raman Spectra of Hydrocarbons of Various Types: III. Isolated or Conjugated Double Bond," Ye.G. Treschora, Y.W. Tatayvskiy, F.W. Levina, A.A. Treschora, Y.W. Tatayvskiy, F.W. Levina, A.A. Tymril' berg, and Te.A. Viktorova, Housov State U Zbur Fiz Khim, Vol 26, No 9, pp 1266-1271 Zbur Fiz Khim, Vol 26, No 9, pp 1266-1271 Zbur Fiz Khim, vol 26, pp 1266-1271 Zbur Fiz Khim, Pentadiene-1,4; 2,3-dimethylbuta- diene-2,4. The intensities of the lines of the studied: 2-methyl-pentadiene-2,4; heptadiene-2,4; octadiene-2,4. The intensities of the lines of the lisolated double bonds there were in the range 1,600- dapprox twice as great as that of the alkenes or two strong lines, the total intensity of which was approx twice as great as that of the alkenes. In the spec- trum of alkyldienes with conjugated double bonds, the literality of the characteristic lines in the range of loco-1650 cm -1 surpasses the intensity of the characteristic line in this field in the case of alkenes. A comparison was made of the spectra of alkenes. A comparison was made of the spectra of alkenes. A comparison was made of the spectra of alkenes. A comparison bonds: hexaliane-2,4, heptadiene-2,4, nod catadiene-2,4. The authors established the approx recurrence of a series of lines, by frequency and intensity, for all three alkyldienes. Zelign	TATAYVSKIY, V. H.		261T37
uman Spectra of Hydrocarbons and Spectra of Some Alkyldien blated or Conjugated Double Beshchova, V.M. Tatayvskiy, R. mail beig, and Ye.A. Viktorour Itz Khim, Vol 26, No 9, pp. Raman spectra of the followidled: 2-methyl-pentadiene-2, he-1,3; 2-methyl-pentadiene-2, he-1,3; 2-methyl-pentadiene-2, he-1,3; 2-methyl-pentadiene-2, he-1,3; 2-methyl-pentadiene-2, he-1,3; 2-methyl-pentadiene-2, he-1,3; 2-methyl-pentadiene-2, he-1,4; The intensities double bonds there were 80 cm -1 either one strong lives the total intensities as great as that of the alm of alkyldienes with conjugaensity of the characteristic line in this fielenes. A comparison was made yldienes of normal structure subgrated double bonds: hexadienes of normal structure blagated double bonds: hexadienely recurrence of a series of intensity, for all three alk	Sep 52 of Various Types: III. es With a System of ond," Ye.G.	1266-1271 S Ing alkyldienes were ing alkyldienes were i; 2,3-dimethylbuta. i; heptadiene-2, i; of the lines of the	ically in a single m of alkyldienes with in the range 1,600. ne with an intensity the alkenes or two y of which was approximates. In the spected double bonds, the lines in the range of tensity of the of the spectra of with a system of ne-2,4, heptadiene-2, ors established the lines, by frequency yldienes.
USS Rear Property of the control of	USSR/Chemistry - Hydrocarbons "Raman Spectra of Hydrocarbons of Raman Spectra of Some Alkyldiene Isolated or Conjugated Double Bo	Faynail berg, and re.A. Viktorov Zhur Fiz Khim, Vol 26, No 9, pp The Raman spectra of the followi studied: 2-methyl-pentadiene-l, ⁴ diene-l,3; 2-methylpentadiene-l, ⁴ octadiene-2, ⁴ . The intensities	spectrum were measured photometroblective scale. In the spectruisolated double bonds there were 1,680 cm -1 either one strong listone as great as that of strong lines, the total intensity twice as great as that of the altrum of alkyldienes with conjugationesity of the characteristic liboo-1680 cm -1 surpasses the in characteristic line in this fiel alkenes. A comparison was made alkyldienes of normal structure conjugated double bonds: hexadie, and cotadiene -2 4. The authapprox recurrence of a series of and intensity, for all three alk





TATEVSKIY, V.M.; PENTIN, Yu.A.

Chemical structure of hydrocarbons and medianisms of heat of combustion of liquid alkanes and alkylbenzenes. Vest. Mosk.un. 8 no.5:69-72 ky 153.

(Mida 6:8)

1. Kafedra fizicheskoy khimii. (Hydrocarbons) (Heat of combustion)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

TATEVSKIY, V.M.; KARAPET 'IMNTS, M.Kh. [authors]; TILICHEYEV, M.D. [redaktor];

Rindiev. .A. [reviewer].

Physicochemical properties of individual hydrocarbons. Edited by M.D.

**Tillicheev. Reviewed by V.A. Kireev. Enur. fis. khim. 27 no. 6:939-940 Je

(MLRA 6:7)

153.

(Hydrocarbons)

TATAYEVSKIY, V. M.

USSR/Chemistry - Hydrocarbons

Oct 53

"Raman Spectra of Hydrocarbons of Different Types. IV.
Raman Spectra of Some Branched Alkanes Containing
Tertiary Carbon Atoms," Ye. G. Treshchova, V. M.
Tatayevskiy, A. A. Faynzil'berg, N. P. Shusherina,
R. Ya. Levina, Moscow State U im M. V. Lomoncsov

Zhur Fiz Khim, Vol 27, No 10, pp 1564-71.

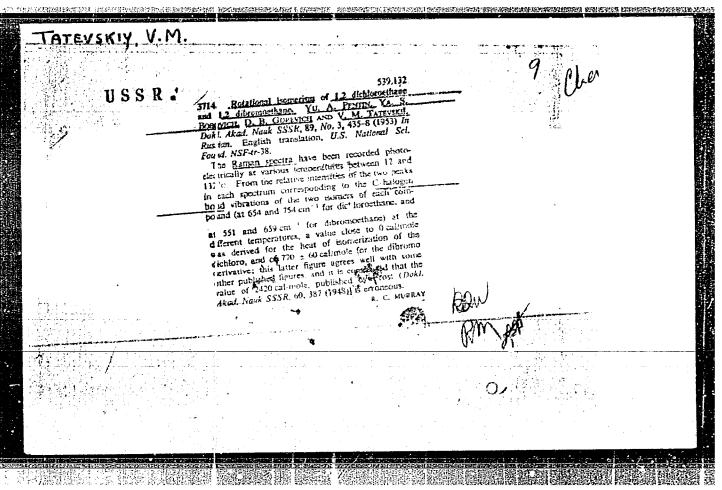
Detd the Raman spectra of 2,3-dimethylhexane, 2,3-dimethylheptane, 2,3-dimethyloctane, 2,3,6-trimethylheptane, 3,5-dimethylheptane, 3-methyl-5-ethyloctane, 3,5-dimethylheptane, and 5-methyl-5-ethyloctane. From

272T15

the data obtained, drew conclusions on the frequencies which correspond to definite types of branching.

Intensity of bands of valence vibration of the C = C bond in Raman spectra of hydrocarbons. Doklady Akad. Hank 8.S.B.R. 89, 287-9 '53. (MIRA 6:3) (0A 47 no.20:10349 '53)

1. M.V.Lomonosov State Univ., Moscow.



The Committee on Stalin Prizes (of the Council of Ministern USOR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscov, No. 22-40, 20 Feb - 3 Apr 1954)

Name

Title of Work

Nominated by

Tatevskiy, V.M.

"Chemical Structure of Moscow State University
Hydrocarbons and the Laws of imeni M.V. Lomonosov
their Physicochemical
Properties"

50° 4-3064, 7 July 1984

USSR/Chemistry V.M.

FD-774

Card 1/1

: Pub 129 11/24

Author

: Tatevskiy, V. M.; Pentin, Yu. A.

and the south of the latest of

Title

: Chemical structure and regularities in the heats of combustion of liquid alkanes and alkyl benzenes

Periodical

: Vest. Mosk. un., Ser. fizikomat. i yest. nauk, Vol 9, No 2, 81-84, Mar 1954

Abstract

: Listed the experimental and calculated values for the heats of combustion of liquid alkanes and of alkyl benzenes. Three tables, Four references (all USSR).

Institution

: Chair of Physical Chemistry

Submitted

: September 17, 1953

USSR/Chemistry - Physical

TATEVSKIY, V.M.

FD-1677

Card 1/1

: Pub. 129-2/25

Author

Tatevskiy, V. M.; Pentin, Yu. A.

Title

: Chemical structure and physicochemical properties of molecules

Periodical

: Vest. Mosk. un Ser. fizikomat. i vest. nauk, Vol 10, 21-32, Feb 1955

Abstract

: The physicochemical properties of a molecule are related to its structure. Molecules are arranged into classes which are determined by the position in the periodic table, bond angle, and other factors that affect the interatomic distances. The classes are further subdivided into types and the types into subtypes. Thus, hydrocarbon molecules were arranged systematically by structure and correlated with physicochemical properties such as molecular volume, refraction, heat of formation, etc. Ultimately, if the physicochemical properties and the proper constants are known, the structure of a molecule can be predicted. Large table; graphs.

No references.

Institution : Chair of Physical Chemistry

Submitted

: September 17, 1954

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

USSR/Chemistry - Physical

FD-2169

Oard 1/1

Pub 129-9/20

Author

Pentin, Yu A., and Tatevskiy, V. M.

Title

Infrared absorption spectra of certain alkyl halides and the question

of rotational isomerism

Periodical:

Vest. Mos. un., Ser. fizikomat. i yest, nauk, 10, No 2, 63-72, Mar 1955

Abstract

Obtained infrared absorption spectra in the region 400-1500 cm⁻¹ for propyl chloride, propyl bromide, isobutyl bromide, n-butyl bromide, isoamyl bromide, 1,2-dichloroethane, 1,2-dibromoethane, 1,2-dibromopropane, and 1,2-disbromobutane. Selected lines for investigating the effects of temperature on relative line intensity and the determination of the relative stability of the rotational isomers of the above compounds. Graphs, formulas. Sixteen references

(six UBSR; fifteen since 1940)

Institution:

Chair of Physical Chemistry

Submitted

October 20, 1954

UBSR/Chemistry - Physical

FD-2170

Card 1/1

Pub 129-10/20

Author

: Pentin, Yu. A., and Tatevskiy, V. M.

Title

Energy differences and possible configuration of rotational isomers

of certain alkyl halides

Periodical:

Vest. Mosk. un., Ser. fizikomat. i yest, nauk, 10, No 2, 73-82,

Mar 1955

Abstract

Studied the effect of temperature (24-80 degrees) on the optical density of infrared absorption bands and calculated the energy differences of rotational isomers of gaseous propyl chloride and bromide, p-butyl and isomeyl bromides, 1,2-dichloro and 1,2-dibromoethane, and 1,2-dibromopropane. Also conjectured on the possible configurations of the rotational isomers of the above compounds and drew conclusions on their relative stability fron determined factors. Tables, graphs, diagrams. Twelve references

(six USSR; all since 1940).

Institution:

Chair of Physical Chemistry

Submitted

October 20, 1954

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

TATEVSKIY, V.M.

WSSR/Chemistry - Physical chemistry

Card 1/1

Pub. 22 - 31/49

Authors

Tatevskiy, V. M.

Title

* Valent carbons in molecules. A concept on the valent state of atoms

Periodical : Dok. AN SSSR 101/3. 515-516. Mar 21. 1955

Abstract

Data are presented regarding valent carbons of various molecules and the valent state of atoms. It is proven that the geometrical configuration of atoms does not experience any basic changes during the substitution of the given central etom by an atom of another element but, of the same group. The configuration remains unchanged (qualitatively, even furing the canage of the or several atoms directly bound with the given central at m. It is explaine, that the geometrical of figuration depends, basically, upon the state of the central atom (its valence, series and multiplicity of chem. bonds). Table.

Institution :

Presented by : Academician A. N. Frumkin, October 19, 1954

USSR/Chemistry - Physical chemistry

Card 1/2

Pub. 22 - 31/51

. Tatevskly, V. M.

Title

Types of chemical bonds of atoms and interatomic spaces in molecules of halogen derivatives

Periodical : Dok. AN SSSR 101/5, 901-902, Apr 11, 1955

Abstract . The three trivalent states in which a tetravalent carbon atom in molecules of organic compounds can exist are described. It is shown that all chemical carbon-halide bonds in halogen derivatives can be divided into three basic types depending of course upon the valent state of the carbon atom. The interatomic spaces were found to remain approximately constant for bonds belonging to one of the basic types; but, they are different for bonds of different types. Each bond type

Institution :

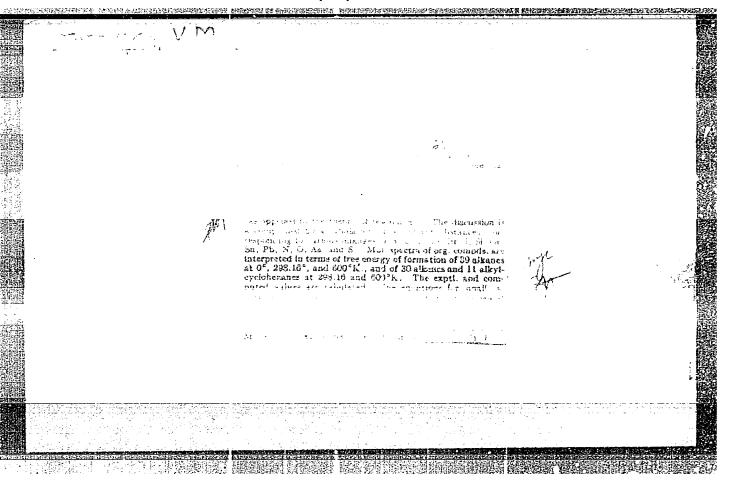
Presented by : Academician N. N. Semenov, October 19, 1954

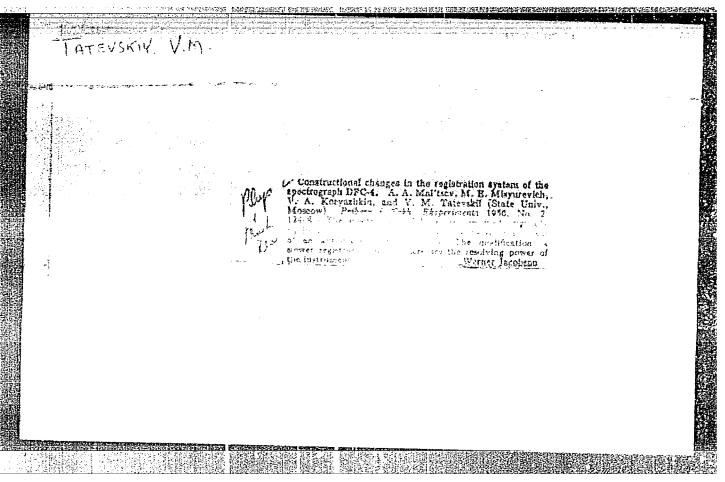
Card 2/2

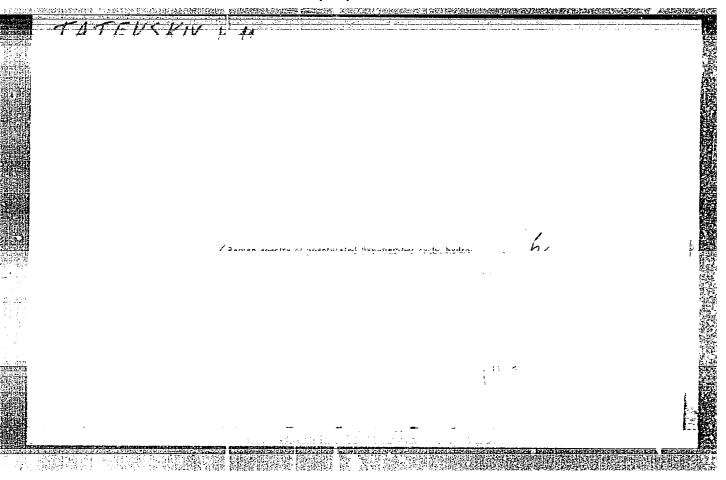
Pub. 22 - 31/51

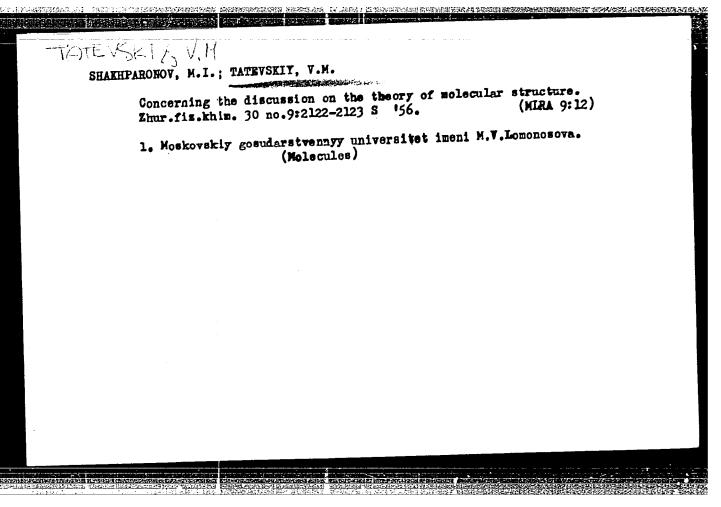
Periodical | Dok. AN ESSR 101/5, 901-902, Apr 11, 1955

Abstract | was found to be characterized by a specific interatomic space. The effect of atoms which do not directly participate in the formation of the given chemical bond is explained. Five references: 3 UNSER and 2 UNA (1934-1953). Table; graphs.









· IATEVSKIY V.M.

USSR/Physical Chemistry - Molecules. Chemical Bonds.

B-.4

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14434

Author Yu. A. Pentin, V. M. Tatevskiy

Inst

Title

Energy differences of inverted isomers of certain halo-

geno derivative hydrocarbons

Orig Pub: Dokl. AN SSSR, 1956, 108, No 2, 290-293

Abstract: With the aim of making a study of inverted isomery in

alkyl halides 1,2-dihalogeno derivative hydrocarbons, the

following spectra were examined: infra-red, comb. of solutions propylchloride (I), propyl bromide (II), n-butyl bromide (III), isoalyl bromide (IV), 1,2-dichloroethane (V), 1,2-dibromoethane (VI), 1,2-dibromopropane (VII). Infra-red spectra (in the region of 400-1500 cm-1) were examined

in solid, liquid and gaseous states, and the comb. of

solutions spectra - in the liquid phase at various temperatures. The relation of frequencies to the trans- or turned

inverted isomers was checked by an examination of the

Card 1/4

USSR/Physical Chemistry - Molecules. Chemical Bonds.

B-4

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14434

Abstract:

influence of crystallization on the spectra (during crystallization, lines corresponding to the turned isomer should appear). Energy differences ΔU between the turned and trans-isomers, which are determined by temperature progress of special line intensities, are equal to (in cal/mole, first number corresponds to the gaseous, second to the liquid state): I -50+70; -300+150; II -280+100, -440+100; III -50+150, -100+100; IV -490+80; +20+100; V 1240+50, 0+60; VI 1780+50, 770+60. VII contains 3 different inverted isomers, in which the atom Br of the group CH₂Br is found in the trans-position in relation corresponding to atom H(I), group CH₃(la) and atom Br(2) of the group C(CH₃)HBr; U_{1a} - U₂ = ~2000,(?) 1020+250, U₁ - U₂ = 1330+120, 330+200; U₁ - U₁ = -300-500(?), -670+100 (the authors assume that U₂ < U₁ < U₁ < U₁ a). Values of ΔU were determined as the mean values from measurements, conducted for different pairs of bands and

Card 2/4

USSR/Physical Chemistry - Molecules. Chemical Bonds.

B.-4

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14434

Abstract:

the distribution of the C atoms removed from the halogen, so that the isomers decompose into 2 groups, in each of which the C-Hal frequency is practically identical. was shown, that the experimentally determined value AU represents the arithmetical mean value of the energy differences of isomers which belong to these two groups. An equation is also obtained which ties in the observed relation of intensities with the energy differences of all isomers of both groups, which thus may be determined in principle if the intensity relationships are measured in a sufficiently wide interval of temperatures.

Card 4/4

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755110017-3"

Category: USSR / Physical Chemistry

Thermodynamics, Thermochemistry. Equilibrium. Physico-

chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29896

Author: Tatevskiy V. M.

: Academy of Sciences USSR Inst

: Heat of Evaporation, Vapor Tension and Boiling Point of Paraffinic Title

Hydrocarbons (Alkanes)

Orig Pub: Dokl. AN SSSR, 1956, 109, No 1, 131-134

Abstract: To calculate heat of evaporation, vapor pressure and boiling point of alkanes, the values of λ and b in the equation $\lg p = -\lambda/T + b$ (1) (> . 4.575 -- molal heat of evaporation, not corrected for non-ideal mature of gas), are calculated analogously to the previously described manner of calculating the other physico-chemical quantities of alkanes (RZhKhim, 1956, 167), in accordance with the formulas $\lambda = \xi n_{ir} \lambda_{ij}$ (2) and $b = \sum n_i b_{ir}$ (3). Values of λ_{ij} and $\mathcal{L}_{i,r}$ are calculated, on the basis of available experimental data

: 1/2 Card

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Category: USSR / Physical Chemistry

Thermodynamics, Thermochemistry. Equilibrium. Physico-

chemical analysis. Phase transitions.

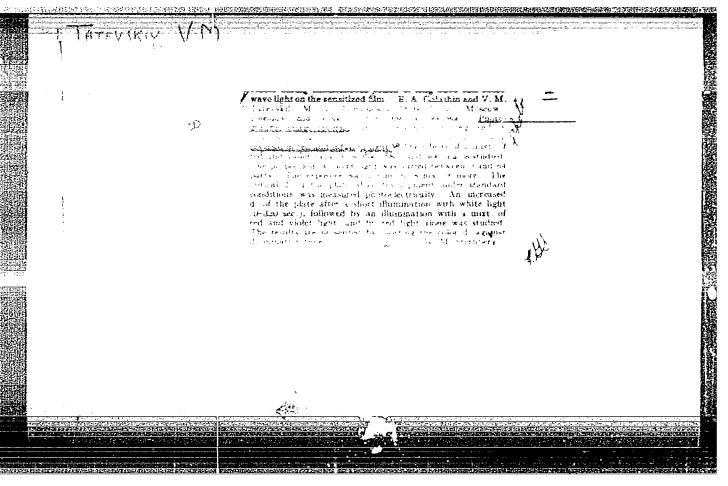
B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29896

for various temperatures within the range of 40-150°; for the same temperatures are calculated, and compared with the experimental values, the λ and b of 31 alkanes. Boiling points of 65 alkanes, at p = 760 mm Hg, calculated in accordance with formulas 1, 2 and 3, deviate, in most cases, from the experimental data by less than 10, and only in one instance the difference amounts to 30.

Card : 2/2

-19-



TATEVSKIY, V..M.

"Methods for the Statistical Computation of the Isotopic Exchange Equilibrium in thex Gaseous Phase."

Problemy Mineties and Catalysis, v. 9. Isotopus in Catalysis, Moscov, Ind-ro AM SSSR, 1957, Mag.

Most of the papers in this collective were presented at the Conf. on Emotopes in Catalysis which took place in Mostory Nov 31- Apr 5, 1956.

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TATEVSKIY, L. USSR / Chemistry of High Molecular Compounds. : Ref. Thur. - Khimiya, No.2, 1958, 6761. 'Abs Jour : Salimov, N.A., Postovskaya, A.F., Kuz'minskiy, A.S., Author Tatevskiy, V.M. : Moscow University Inst : Investigation of Structural Changes of Sodium Butadiene Title Caoutchous in the Thermal Oxidation Process using Infra-Red Spectroscopy Method. : Vesti. Mosk, un-ta. Ser. matem., mekhan., astron., fiz., Orig Puh khimiya, 1957, No.1, 164-169. : By studying the IK (infra-red) spectra of thermally oxidized sodium butadiene cacutchouc at 1400 (60 min. oxidation) Abstract it has been established that during the oxidation process the following oxygen-containing groups were formed: : 1/8 Card

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USSR / Chemistry of High Molecular Compounds.

Abs Jour : Ref. Zhur. - Khimiya, No.2, 1958, 6761

Abstract

: hydroperoxides, alcohols, esters, ethers, aldehydes, ketones and acids. After 20 minutes of oxidation theme appeared an absorption band of -OOH and -OH groups at 3380 om-1 the intensity of which increased with time of oxidation, while the maximum of absorption shifted to 3450 cm-1 (after 60 min.); the intensity of the absorption band of the cartonyl groups C = 0 at 1700 cm-l increased, while in the range of 1000-1400 cm-1 there appeared absorption bands of the groups R_1 -C(=0)-OR at 1240 cm⁻¹ and of the R_1 -O-R (ethers) at 1165 cm⁻¹. It was established that the newly appearing absorption bands at 810 and 880 cm-1 belong not to the peroxide, as it has been previously supposed, but to olefins having a structure 1,1,2-trialkylethylene R1R2C=CHR3 and 1,1 dialkylethylene R, R, C= CH2. In the course of oxidation, the intensity of the absorption bands of double bonds C = C 1,2 (910 and 992 cm⁻¹) 1,4 - trand (965 cm⁻¹) and 1,4 - ois (680 cm-1) was significantly decreased; an

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Abs Jour

: Ref. Zhur. - Khimiya, No.2, 1958, 6761.

Abstract

analogous decrease of intensities was also observed for absorption bands of double bonds C = C at 1640 cm⁻¹ and for valence oscillation C-H of double bonds at 2979, 3019 and 3080 cm⁻¹; and decrease of absorption bands of methylene groups -CH at 720, 2856 and 2929 cm⁻¹ showed that 0 atoms in addition to double bonding attach themselves also to C atoms located in a position to the double bonds. An increase in intensity of the absorption band at 3400 cm⁻¹ is linked to the formation of hydroxyl rather than hydroperoxide groups as it was confirmed by the results of the iodometric method.

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The Apparatus for Production of Raman Scattering Spectra of Gaseous Substances.

(Fig.1). The apparatus was used to study CO₂ gas. Spectrum of CO₂ at 3-6 atm was photographed using a spectrograph NCN-51 with a short-focus camera. At 20 A in the light source the CO₂ doublet 1286-1388 cm⁻¹ was obtained after an exposure of several minutes. Fig. 2 shows this doublet obtained at 3 atm and 20 minute exposure. Two students of the Moscow State University, A.S. Bayshev and Yu.I. Kotov took part in this work. There are 2 figures and 5 references, 2 of which are

SUBMITTED:

January 12, 1957.

AVAILABLE:

Library of Congress.

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51-3-3/14

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AUTHORS:

and Tatevskiy, V. M. Pozdyshev, V. A., Pentin, Yu. A.

TITLE:

Infrared Spectra of Absorption by Certain Halogenated Alkanes in Liquid and Solid States and the Problem of Number and Configuration of Rotational Isomers. (Infrakrasnyye spektry pogloshcheniya nekotorykh galoidalkanov v zhidkom i tverdom sostoyaniyakh i

vopros o chisle i konfiguratsiyakh povorotnykh izomerov.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.3, pp.211-220.

(USSR)

ABSTRACT:

At low temperatures concentrations of certain isomers are so small that their spectral lines or bands disappear. A "freezing" method based on this effect (Refs.1, 2, 3) was used by the present authors for comparison of infrared spectra of absorption by liquids and frozen substances.

The results obtained were used to find the number, configuration and relative stability of rotational isomers in certain fairly complex halogenated alkanes.

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The following substances were studied: (1) 1,2-dichloroethane,

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Pariodore de la compario del la compario de la compario del la compario de la compario del la compario de la co 51-3-3/14 Infrared Spectra of Absorption by Certain Halogenated Alkanes in Liquid and Solid States and the Problem of Number and Configuration of Rotational Isomers. (2) propyl chloride, (3) 1,2-dibromopropane,
(4) 1,2-dibromobutane, (5) isobutyl bromide,
(6) isoamyl bromide, (7) 1,4-dibromobutane. Infrared
absorption spectra of these substances were obtained for the region of 450 to 1500 cm⁻¹. In freezing of the liquids the lowest temperature used was about -175°C. Figs. 2 & 3 show spectra of the substances studied in liquid and solid state respectively. For 1,2-dichloroethane three C2h rotational forms were found In the solid state only one C2h form and two C2 forms. Rotational isomeric configurations of propylchloride are two in number (Cg and Cl forms). In the solid state only one trans-form remains in propyl chloride. The 61.8 cm 1 frequency was difficult to interpret. red spectra of the liquid and crystalline states of isobutyl bromide were identical. The authors conclude that either Cg and C1 configurations exist both in the Card 2/4

51-3-3/14

Infrared Spectra of Absorption by Certain Halogenated Alkanes in Liquid and Solid States and the Problem of Number and Configuration of Rotational Isomers.

liquid and solid states, or only one configuration exists in both states. The authors find themselves unable to decide this point. For 1,2-dibromopropane three Again no difference between the liquid and solid-state spectra was observed. rotational isomers were suggested. The 1138 cm -1 frequency, which is more intense in the solid state, is assigned to the trans-distribution of bromine atoms, the 1228 and 1203 cm 1 frequencies are assigned to the two other isomers. iscemyl bromide and 1,2-dibromobutane have each two C-C bonds which permit rotational isomerism. In both these substances two rotational isomeric configurations are observed, both of which are stable in liquid and For 1,4-dibromobutane six theoretical configurations of the liquid state are shown in Fig. 5. In the crystalline state of this substance only one isomer remains which has a mirror-rotational axis of the

Card 3/4

51-3-3/14

Infrared Spectra of Absorption by Certain Halogenated Alkanes in Liquid and Solid States and the Problem of Number and Configuration of Rotational Isomers.

second order (Fig. 5, Formula 6). There are 5 figures and 20 references, 4 of which are Slavic.

SUBMITTED: January 8, 1957.

AVAILABLE: Library of Congress

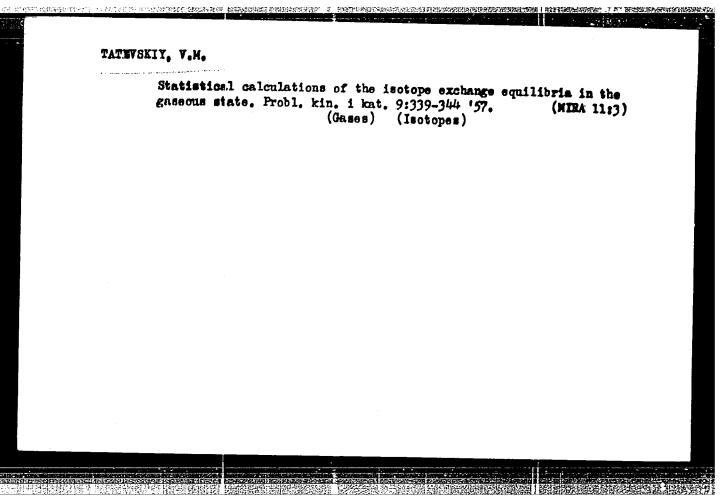
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POSTOVSKAYA, A.F.; SALIMOV, M.A.; KUZ'MINSKIY, A.S.; TATRYSKIY, V.M.

Structural changes of sodium-butadiene rubber in the process of light oxidation. Fig. sbor. no.3:423-427 157. (MIRA 11:8)

1. Nauchno-isaledovatel'skiy institut rezinovoy promyshlennosti i Khimicheskiy fakul'tet Moskovskogo ordena Lenina i ordena Trudovogo Krasnogo Znameni gosudarstvennogo universiteta im. M.V. Lomonosova. (Rubber-Spectra) (Oxidation)



83635 8/081/60/000/015/001/01⁴

A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 15, p. 15, # 60232

AUTHORS: Mal'tsev, A.A., Kuzyakov, Yu.Ya., Tatevskiy, V.M. (I)
Mal'tsev, A.A., Vinokurov, V.G., Tatevskiy, V.M. (II)

TITLE:

Study of Electron Spectra and of the Isotopic Effect in Oxygen

Boron Compounds. I. 6-Bands of BO Molecules. II. "Boric Acid"

Bands

PERIODICAL: Fiz. sb. L'vovsk. un-t, 1957, No. 3 (8), pp. 475-480; 480-485

TEXT: I. A $\Pi \Phi (-3 \text{ (DFS-3)})$ spectrograph (2A/mm dispersion) was used to investigate the emission spectrum of BO β -bands (B Σ - X Σ transition) in the arc and a discharge tube with a hot hollow cathode containing B₂O₃. Rotation analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 0, 0 - 1, 0 - 2, 0 - 3, 1 - 4, 1 - 5, 2 - 5, 2 - 5, 2 - 5, 2 - 5, 2 - 6, and tion analysis of 0 - 0, 0 - 0, 0 - 0, 0 - 0, 0 - 0

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83635

S/081/60/000/015/001/01⁴ A006/A001

Study of Electron Spectra and of the Isotopic Effect in Oxygen Boron Compounds. I. Bands of BO Molecules. II. "Boric Acid" Bands

The method of least squares was used to recalculate Sheibe's data for the X² \(\) state. In all bands spin doubling was observed.

II. Spectrographs with diffraction gratings were used to investigate so-called II. Spectrographs with diffraction gratings were used to investigate so-called fluctuation bands of boric acid, located in the 3700 - 6800 A range. The fluctuation bands of boric acid, located in the 3700 - 6800 A range. The following spectrum sources were used: a discharge tube with a hot hollow cathode containing boron or boron anhydride in an atmosphere of He and O2 mixture, and an oxygen-hydrogom flame into which boric acid solution was introduced. At a noxygen-hydrogom flame into which boric acid solution was introduced. At a observed for the majority of bands. The use of boron concentrated to 85% with observed for the majority of bands. The use of boron concentrated to 85% with a B¹ isotope, allowed the determination of isotope band edges, shifted towards a B¹ isotope, allowed the determination of isotope band edges, shifted towards a B¹ isotope, allowed the determination of isotope band edges, shifted towards a B¹ isotope, allowed the determination of isotope band edges, shifted towards a B¹ isotope, allowed the determination of isotope bands in the 5450 and the short-wave side by about 6,5 and 5 A respectively for bands in the 5450 and 5750 A range. This result rejects Singh's theory (Singh, N.L., Proc. Indian 5750 A range. This result rejects Singh's theory (Singh, N.L., Proc. Indian 5750 A range. This result rejects Singh's theory (Singh, N.L., be shifted acid to the BO molecule. According to Singh the isotopic bands must be shifted to the long-wave side by 22 and 44 A respectively. When introducing to the spectrum source heavy water vapors, no isotopic effect is revealed in the

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83635

S/081/60/000/015/001/01⁴ A006/A001

Study of Electron Spectra and of the Isotopic Effect in Oxygen Boron Compounds, I. β -Bands of BO Molecules, II. "Boric Acid" Bands

fluctuation bands of the boric acid. This indicates the absence of hydrogen in the molecule composition giving rise to these bands. It is assumed that the fluctuation bands of the boric acid belong to the multi-atomic oxygen compound of boron, $B_{\chi}O_{\chi}$.

A. Mal'tsev

Translator's note: This is the full translation of the original Russian abstract.



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